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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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NOVARTIS VACCINES AND DIAGNOSTICS INC.
INTELLECTUAL PROPERTY R338
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EXAMINER	
GANGLE, BRIAN J	

ART UNIT	PAPER NUMBER
1645	

MAIL DATE	DELIVERY MODE
09/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,753	PIZZA, MARIAGRAZIA	
	Examiner	Art Unit	
	Brian J. Gangle	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 August 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-19,22-26 and 28* is/are pending in the application.

4a) Of the above claim(s) *16-19,22-25 and 28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 4-14, and 26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/8/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of Group II in the reply filed on 8/29/2007 is acknowledged. The traversal is on the ground(s) that Groups I-XI have the same special technical feature, which is "the capacity to induce an antibody response in a subject that is bactericidal against two or more of hypervirulent lineages A4, ET-5, and lineage 3 of *N. meningitidis* serogroup B."

This is not found persuasive because, contrary to applicant's assertion, there is no special technical feature linking the groups. It is noted that the claims, as originally filed, did not have the feature applicant refers to in common. The examiner accepts that, as amended, the technical feature linking the claims is "the capacity to induce an antibody response in a subject that is bactericidal against two or more of hypervirulent lineages A4, ET-5, and lineage 3 of *N. meningitidis* serogroup B," as applicant states. However, Comanducci *et al.* (J. Exp. Med., 195:1445-1454, 6/2002, IDS filed 4/8/2005) disclose a composition comprising NadA, which induces bactericidal antibodies against two or more of hypervirulent lineages A4, ET-5, and lineage 3 of *N. meningitidis* serogroup B (see abstract).

Therefore, the technical feature linking the inventions of groups I-XI does not constitute a special technical feature as defined by PCT Rule 13.2, as it does not define a contribution over the art.

The requirement is still deemed proper and is therefore made FINAL.

Claims 1, 4-19, 22-26, and 28 are pending. Claims 2-3, 20-21, 27, and 29-31 are cancelled. Claims 1, 4, 16-19, 22-23, 25-26, and 28 are amended. Claims 16-19, 22-25, and 28 are withdrawn as being drawn to non-elected inventions. Claims 1, 4-14, and 26 are currently under examination.

Specification

The use of the trademark TWEEN has been noted in this application on pages 15 and 18. It should be capitalized wherever it appears and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

It is noted that the cited occurrence of improper use is only exemplary and applicant should review the specification to correct any other use of trademarks.

Information Disclosure Statement

The information disclosure statement filed on 4/8/2005 has been considered. An initialed copy is enclosed.

The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 4-14 and 26 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The rejected claims are drawn to compositions comprising two or more recombinant polypeptides wherein the composition is able to induce a bactericidal antibody response against two or more of hypervirulent lineages A4, ET-5, and lineage 3 of *N. meningitidis* serogroup B.

Dependent claims limit the composition to where five meningococcal antigens are included: an "NadA" protein, a "741" protein, a "936" protein, "a 953" protein, and a "287" protein. In addition, there are claims drawn which list the "NadA" protein as SEQ ID NO:2, or a protein with 85% identity to SEQ ID NO:2; the "741" protein as SEQ ID NO:3, or a protein with 85% identity to SEQ ID NO:3; the "936" protein as SEQ ID NO:4, or a protein with 85% identity to SEQ ID NO:4; the "953" protein as SEQ ID NO:5, or a protein with 85% identity to SEQ ID NO:5; and the "287" protein as SEQ ID NO:6, or a protein with 85% identity to SEQ ID NO:6.

The claims are drawn to a vast genus of immunogenic compositions comprising two or more recombinant polypeptides that are capable of inducing a bactericidal antibody response against two or more of hypervirulent lineages A4, ET-5, and lineage 3 of *N. meningitidis* serogroup B (claims 1 and 4), and to compositions with proteins having more than 85% identity with SEQ ID NOs 2, 3, 4, 5, or 6 (claims 5-14). To fulfill the written description requirements set forth under 35 USC § 112, first paragraph, the specification must describe at least a substantial number of the members of the claimed genus, or alternatively describe a representative member of the claimed genus, which shares a particularly defining feature common to at least a substantial number of the members of the claimed genus, which would enable the skilled artisan to immediately recognize and distinguish its members from others, so as to reasonably convey to the skilled artisan that applicant has possession the claimed invention. To adequately describe the genus of immunogenic compositions comprising the claimed composition, applicant must adequately describe the antigenic determinants (immunoepitopes) that elicit the induction of bactericidal antibodies directed against two or more strains of hypervirulent lineages A4, ET-5, and lineage 3 strains of serogroup B *N. meningitidis*, not just those determinants that would elicit an immune response to the said polypeptides since a given polypeptide can be immunogenic but not induce a bactericidal antibody response directed against two or more strains of hypervirulent lineages A4, ET-5, and lineage 3 strains of serogroup B *N. meningitidis.*

The specification discloses a composition comprising an NadA polypeptide with the sequence of SEQ ID NO:2, a fusion protein with the sequence of SEQ ID NO:7 (a fusion of SEQ ID NOs 6 and 5), and a fusion protein with the sequence of SEQ ID NO:8 (a fusion of SEQ ID NO:4 and 3). This composition satisfies the written description requirements. Applicant has not

demonstrated that any other composition, including variants of the above composition, is capable of inducing a bactericidal antibody response directed against two or more strains of hypervirulent lineages A4, ET-5, and lineage 3 strains of serogroup B *N. meningitidis*. The specification further does not disclose distinguishing and identifying features of a representative number of members of the genus of immunogenic compositions to which the claims are drawn, such as a correlation between the structure of the immunoepitope and its recited function (i.e. eliciting the recited immune response), so that the skilled artisan could immediately envision, or recognize at least a substantial number of members of the claimed genus of immunogenic compositions. Moreover, the specification fails to disclose which amino acid residues are essential to the function of the immunoepitope or which amino acids might be replaced so that the resultant immunoepitope retains the activity of its parent, or by which other amino acids the essential amino acids might be replaced so that the resultant immunoepitope retains the activity of its parent. Therefore, since the specification fails to adequately describe at least a substantial number of members of the genus of immunoepitopes to which the claims are based; the specification fails to adequately describe at least a substantial number of members of the claimed genus of immunogenic compositions that elicit the induction of bactericidal antibodies directed against two or more strains of hypervirulent lineages A4, ET-5, and lineage 3 strains of serogroup B *N. meningitidis*.

MPEP § 2163.02 states, "[a]n objective standard for determining compliance with the written description requirement is, 'does the description clearly allow persons of ordinary skill in the art to recognize that he or she invented what is claimed' ". The courts have decided:

> The purpose of the "written description" requirement is broader than to merely explain how to "make and use"; the applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession *of the invention*. The invention is, for purposes of the "written description" inquiry, *whatever is now claimed.*

See *Vas-Cath, Inc. v. Mahurkar*, 935 F.2d 1555, 1563-64, 19 USPQ2d 1111, 1117 (Federal Circuit, 1991). Furthermore, the written description provision of 35 USC § 112 is severable from its enablement provision; and adequate written description requires more than a mere statement that it is part of the invention and reference to a potential method for isolating it. See

Fiers v. Revel, 25 USPQ2d 1601, 1606 (CAFC 1993) and *Amgen Inc. V. Chugai Pharmaceutical Co. Ltd.*, 18 USPQ2d 1016.

The Guidelines for Examination of Patent Applications Under the 35 U.S.C. 112, paragraph 1, ``Written Description'' Requirement (66 FR 1099-1111, January 5, 2001) state, "[p]ossession may be shown in a variety of ways including description of an actual reduction to practice, or by showing the invention was 'ready for patenting' such as by disclosure of drawings or structural chemical formulas that show that the invention was complete, or by describing distinguishing identifying characteristics sufficient to show that the applicant was in possession of the claimed invention" (*Id.* at 1104). Moreover, because the claims encompass a genus of variant species, an adequate written description of the claimed invention must include sufficient description of at least a representative number of species by actual reduction to practice, reduction to drawings, or by disclosure of relevant, identifying characteristics sufficient to show that Applicant was in possession of the claimed genus. However, factual evidence of an actual reduction to practice has not been disclosed by Applicant in the specification; nor has Applicant shown the invention was "ready for patenting" by disclosure of drawings or structural chemical formulas that show that the invention was complete; nor has Applicant described distinguishing identifying characteristics sufficient to show that Applicant were in possession of the claimed invention at the time the application was filed.

The *Guidelines* further state, "[f]or inventions in an unpredictable art, adequate written description of a genus which embraces widely variant species *cannot* be achieved by disclosing only one species within the genus" (Id. at 1106); accordingly, it follows that an adequate written description of a genus cannot be achieved in the absence of a disclosure of at least one species within the genus. As evidenced by Greenspan *et al.* (Nature Biotechnology 7: 936-937, 1999), defining epitopes is not as easy as it seems. Greenspan *et al.* recommends defining an epitope by the structural characterization of the molecular interface between the antigen and the antibody is necessary to define an "epitope" (page 937, column 2). According to Greenspan *et al.*, an epitope will include residues that make contacts with a ligand, here the antibody, but are energetically neutral, or even destabilizing to binding. Furthermore, an epitope will not include any residue not contacted by the antibody, even though substitution of such a residue might profoundly affect binding. Accordingly, it follows that the immunoepitopes that can elicit a

protective immune response to a given pathogen can only be identified empirically. Therefore, absent a detailed and particular description of a representative number, or at least a substantial number of the members of the genus of immunoepitopes, the skilled artisan could not immediately recognize or distinguish members of the claimed genus of immunogenic compositions that elicit the induction of bactericidal antibodies directed against two or more strains of hypervirulent lineages A4, ET-5, and lineage 3 strains of serogroup B *N. meningitidis*..

Absent factual evidence, a percentage sequence similarity of less than 100 % is not deemed to reasonably support to one skilled in the art whether the biochemical activity of the claimed subject matter would be the same as that of a similar known biomolecule. It is known for nucleic acids as well as proteins, for example, that even a single nucleotide or amino acid change or mutation can destroy the function of the biomolecule in many instances, albeit not in all cases. The effects of these changes are largely unpredictable as to which ones have a significant effect versus not. Therefore, the citation of sequence similarity results in an unpredictable and therefore unreliable correspondence between the claimed biomolecule and the indicated similar biomolecule of known function and therefore lacks support regarding utility and/or enablement.

Therefore, because the art is unpredictable, in accordance with the *Guidelines*, the description of immunoepitopes (antigenic determinants) is not deemed representative of the genus of immunogenic compositions to which the claims refer. Hence, none of the claims meet the written description requirements.

Additionally, claim 4 recites the designations "NadA" protein, "741" protein, "936" protein, "953" protein, and "287" protein. These terms constitute laboratory designations that do not convey any structural or functional limitations, and which are not described in the specification. Therefore, the proteins to which these designations refer have not been adequately described under the requirements of 35 USC 112, first paragraph. Consequently, only a composition containing the proteins consisting of the sequences of SEQ ID NO:2-6 satisfies the written description requirements of 35 USC 112, first paragraph.

Claims 1, 4-14 and 26 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compositions comprising the five meningococcal antigens consisting of the sequences of SEQ ID NO:2, 3, 4, 5, and 6, does not reasonably provide

enablement for the full breadth of the instant claims. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

Enablement is considered in view of the Wands factors (MPEP 2164.01(A)). These include: nature of the invention, breadth of the claims, guidance of the specification, the existence of working examples, state of the art, predictability of the art and the amount of experimentation necessary.

In re Fisher, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970) states, "The amount of guidance or direction needed to enable the invention is inversely related to the amount of knowledge in the state of the art as well as the predictability in the art." "The "amount of guidance or direction" refers to that information in the application, as originally filed, that teaches exactly how to make or use the invention. The more that is known in the prior art about the nature of the invention, how to make, and how to use the invention, and the more predictable the art is, the less information needs to be explicitly stated in the specification. In contrast, if little is known in the prior art about the nature of the invention and the art is unpredictable, the specification would need more detail as to how to make and use the invention in order to be enabling" (MPEP 2164.03). The MPEP further states that physiological activity can be considered inherently unpredictable. Thus, Applicant assumes a certain burden in establishing that inventions involving physiological activity are enabled. All of the Wands factors have been considered with regard to the instant claims, with the most relevant factors discussed below.

Nature of the invention: The instant claims are drawn to compositions comprising two or more recombinant polypeptides wherein the composition is able to induce a bactericidal antibody response against two or more of hypervirulent lineages A4, ET-5, and lineage 3 of *N. meningitidis* serogroup B. Dependent claims limit the composition to where five meningococcal antigens are included: an "NadA" protein, a "741" protein, a "936" protein, "a 953" protein, and a "287" protein. In addition, there are claims drawn which list the "NadA" protein as SEQ ID NO:2, or a protein with 85% identity to SEQ ID NO:2; the "741" protein as SEQ ID NO:3, or a protein with 85% identity to SEQ ID NO:3; the "936" protein as SEQ ID NO:4, or a protein with 85% identity to SEQ ID NO:4; the "953" protein as SEQ ID NO:5, or a protein with 85% identity to SEQ ID NO:5; and the "287" protein as SEQ ID NO:6, or a protein with 85% identity

to SEQ ID NO:6.

Breadth of the claims: The broadest claim encompasses any polypeptides capable of inducing the required immune response in any animal using any means of administration or adjuvant.

Guidance of the specification/The existence of working examples: The specification discloses a working example wherein a composition comprising an NadA polypeptide with the sequence of SEQ ID NO:2, a fusion protein with the sequence of SEQ ID NO:7 (a fusion of SEQ ID NOs 6 and 5), and a fusion protein with the sequence of SEQ ID NO:8 (a fusion of SEQ ID NO:4 and 3) is capable of inducing the required immune response. However, the specification does not disclose any other compositions (or variants of the above composition) that are capable of inducing the required bactericidal antibody response.

State of the art: While the skill in the art of immunology is high, to date, prediction of a specific immune response for any given composition in any given animal is quite unpredictable. Moreover, protein chemistry is probably one of the most unpredictable areas of biotechnology. Consequently, the effects of sequence dissimilarities upon protein structure and function cannot be predicted. Bowie *et al.* (Science, 1990, 247:1306-1310) teach that an amino acid sequence encodes a message that determines the shape and function of a protein and that it is the ability of these proteins to fold into unique three-dimensional structures that allows them to function, carry out the instructions of the genome **and form immunoepitopes**. Bowie *et al.* further teach that the problem of predicting protein structure from sequence data and in turn utilizing predicted structural determinations to ascertain functional aspects of the protein is extremely complex. (column 1, page 1306). Bowie *et al.* further teach that while it is known that many amino acid substitutions are possible in any given protein, the position within the protein's sequence where such amino acid substitutions can be made with a reasonable expectation of maintaining function are limited. Certain positions in the sequence are critical to the three dimensional structure/function relationship and these regions can tolerate only conservative substitutions or no substitutions (column 2, page 1306). Additionally, as evidenced by Greenspan *et al.* (Nature Biotechnology, 7:936-937, 1999), defining epitopes is not as easy as it seems. Greenspan *et al.* recommends defining an epitope by the structural characterization of the molecular interface between the antigen and the antibody is necessary to define an "epitope" (page 937, column 2).

According to Greenspan *et al.*, an epitope will include residues that make contacts with a ligand, here the antibody, but are energetically neutral, or even destabilizing to binding. Furthermore, an epitope will not include any residue not contacted by the antibody, even though substitution of such a residue might profoundly affect binding. Accordingly, it follows that the immunoepitopes that can elicit a particular immune response to a given pathogen can only be identified empirically. This constitutes undue experimentation.

Consequently, in view of the lack of support in the art and specification, it would require undue experimentation on the part of the skilled artisan to make and use the composition as claimed; therefore, the full scope of the claims is not enabled.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 7, 9, 11, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5, 7, 9, 11, and 13 are rendered vague and indefinite by the use of the term "identity." The claims each refer to a protein that has 85% or more identity to a given sequence. It is not clear what limitations the term "identity" is meant to engender. Is applicant referring to sequence identity or some other measure of identity? How would other measures of identity be quantified to arrive at a value of 85%?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 4-14, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fraser *et al.* (WO 99/57280, 1999) in view of Comanducci *et al.* (J. Exp. Med., 195:1445-1454, 6/2002, IDS filed 4/8/2005).

The instant claims are drawn to compositions comprising two or more recombinant polypeptides wherein the composition is able to induce a bactericidal antibody response against two or more of hypervirulent lineages A4, ET-5, and lineage 3 of *N. meningitidis* serogroup B (claim 1). Dependent claims limit the composition to where five meningococcal antigens are included: an "NadA" protein, a "741" protein, a "936" protein, "a 953" protein, and a "287" protein (claim 4); wherein the NadA protein is SEQ ID NO:2 (claim 6), or a protein with 85% identity to SEQ ID NO:2 (claim 5); wherein the "741" protein is SEQ ID NO:3 (claim 8), or a protein with 85% identity to SEQ ID NO:3 (claim 7); wherein the "936" protein is SEQ ID NO:4 (claim 10), or a protein with 85% identity to SEQ ID NO:4 (claim 9); wherein the "953" protein is SEQ ID NO:5 (claim 12), or a protein with 85% identity to SEQ ID NO:5 (claim 11); and wherein the "287" protein is SEQ ID NO:6 (claim 14), or a protein with 85% identity to SEQ ID NO:6 (claim 13), further comprising a pharmaceutically acceptable carrier (claim 26).

Fraser *et al.* disclose vaccines that contain *Neisseria meningitidis* polypeptides (see page 34, final section). Said polypeptides can be prepared recombinantly (see page 6, paragraph 3) and the vaccines contain an effective amount of immunogenic polypeptides (see page 36, paragraph 2). Among the proteins listed to be used in said vaccines are NadA (see SEQ ID NO:2944, page 1377), a "741" protein comprising SEQ ID NO:3 (see SEQ ID NO:2536, page 1205), a "936" protein comprising SEQ ID NO:4 (see SEQ ID NO:2884, page 1352), a "953" protein comprising SEQ ID NO:5 (see SEQ ID NO:2918, page 1365), and a "287" protein comprising SEQ ID NO:6 (see SEQ ID NO:1202, page 671).

Fraser *et al.* differs from the instant invention in that, while vaccines containing multiple antigens are disclosed, they do not specifically disclose that the vaccines should contain an "NadA" protein, a "741" protein, a "936" protein, "a 953" protein, and a "287" protein. Furthermore, the NadA protein disclosed does not have the sequence of SEQ ID NO:2.

Comanducci *et al.* disclose a composition comprising NadA, which induces bactericidal antibodies against two or more of hypervirulent lineages A4, ET-5, and lineage 3 of *N.*

meningitidis serogroup B (see abstract). Said NadA protein has the sequence of the instant SEQ ID NO:2 (see figure 4, allele 3).

According to MPEP 2144.06, "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980). Therefore, it would have been obvious to use the "NadA" protein, "741" protein, "936" protein, "953" protein, and "287" protein in a vaccine composition against *N. meningitidis* serogroup B because these proteins are taught to be individually useful for that purpose.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Gangle whose telephone number is (571) 272-1181. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Siew can be reached on (571) 272-0787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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